SPECIAL AIRWORTHINESS INFORMATION BULLETIN

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http://www.faa.gov/aircraft/safety/alerts/SAIB

This is information only. Recommendations aren't mandatory.

Introduction

This Special Airworthiness Information Bulletin (SAIB) alerts owners and operators of, and repair facilities working on, **Honeywell International Inc. TPE331 series turboprop, and TSE331-3U model turboshaft engines.** This SAIB clarifies the new flight cycle counting method and definition of a "minor cycle" in AD 2006-14-03. AD 2006-14-03 mandates a new flight cycle counting method for rotors used in aircraft that make multiple takeoffs and landings without an engine shutdown. This new flight cycle counting method requires a records review to determine if turbine rotors were previously used in special-use operations. Using the new flight cycle counting methods and the definition of "minor cycle" in this SAIB constitutes an approved Alternate Method of Compliance (AMOC) with AD 2006-14-03. Owners and operators using this AMOC must document compliance with AD 2006-14-03 by noting this SAIB in the required record of compliance.

This SAIB is an Alternative Method of Compliance, with paragraphs (f), (g), and (o) of AD 2006-14-03. The Manager of the Los Angeles Aircraft Certification Office approves this AMOC on September 15, 2006 as an acceptable level of safety.

The FAA intends to incorporate the following recommendations into a revision of AD 2006-14-03.

Background

AD 2006-14-03 was published in the Federal Register on July 5, 2006 with an effective date of August 9, 2006. Paragraphs (f) and (g) of that AD apply to "turbine rotors .... currently or previously used in special-use operations". This statement requires a review of prior turbine rotor history to determine whether the turbine rotor was ever used in special-use operations. An engine used in special-use operations is defined by the AD as an engine that accrues major and minor cycles and is installed in an aircraft that makes multiple takeoffs and landings without engine shutdown.

Prior to this AD, there was no FAA requirement to record turbine rotor cycles based on whether the engine or turbine rotor was used in special-use operations. Additionally there was no FAA requirement to record hours and cycles for a single rotor. The AD incorporates Honeywell service bulletins (SBs), which apply to special-use operators only. The SBs recommend calculating equivalent cycles based on all (past and present) major and minor cycles on turbine rotors currently used in special-use operations.

Clarifying the New Flight Cycle Counting Method

Background

Turbine rotors "currently" used in special-use operations as defined in the AD applies to all operators 100 cycles after the effective date of

the AD. This means that all aircraft operators must keep a record of multiple takeoffs and landings without an engine shutdown on a going-forward basis beginning 100 cycles after the effective date of the AD.

Turbine rotors "previously" used in special-use operations applies to turbine rotors in engines installed on aircraft as of August 9, 2006 (the effective date of AD 2006-14-03) operating under Part 137 (Agricultural Aircraft Operations), Part 105 (Parachute Operations), and Part 91, Subpart D (Special Flight Operations including aerobatic, towing, and parachuting operations). For these applications, that special-use operator must do a historical review of the turbine rotors for the period of time the engine was installed on the current aircraft.

Recommendations for all owners and operators:

To assist in complying with the AD, it is recommended that you send a signed statement (memo of understanding) to the authorized person signing the engine logbook and Life-Limit Log Card (LLLC) stating whether you used the aircraft/ engine in any special-use operations, as defined by the AD. As an alternative method of compliance, the owner or operator may make an entry in the aircraft engine records stating whether the aircraft was used in special-use operations, as defined by the AD.

For infrequent special-use operations (less than 5 minor cycles, as defined in paragraph (o) of AD 2006-14-03, per month), an operator may approximate the number of cycles per unit time.

Recommendation for repair facilities:

It is recommended you request the owner or operator provide you with a signed memo of understanding stating whether the engine was used in special-use operations in the last aircraft installation.

Clarifying Minor Cycle Definition

Background

Paragraph (o) in the Definitions section of AD 2006-14-03 states "A minor cycle, which occurs within a major cycle, is an additional landing with an engine speed reduction to ground idle with no engine shutdown followed by a takeoff." The original intent of the AD is that a minor cycle is counted after typical engine speed lever movement to ground idle "low" position followed by a takeoff. Operators have discussed a new mission cycle whereas the engine's speed lever would be retained in ground idle "high" position while in ground idle (beta mode) with no engine shutdown followed by a takeoff.

Recommendation for clarifying minor cycle definition:

Current installation manuals for the TPE331-1 through -12 series engines recommend that ground idle low is used after turning off the runway. Retaining the engine's speed lever in ground idle "high" position after turning off the runway (beta mode) with no engine shutdown followed by a takeoff is an unusual mode of aircraft and engine operation and has not been thoroughly evaluated by the FAA. The LAACO recommends that any novel operation of ground idle be considered as ground idle as referenced in paragraph (o) of AD 2006-14-03; therefore, this new mission cycle would be subject to the AD's method of counting partial cycles regardless of the original intentions.

For Further Information Contact

Joseph Costa, Aerospace Engineer, FAA Los Angeles Aircraft Certification Office, ANM-140L, 3960 Paramount Blvd., Lakewood, CA 90712-4137; phone: 562-627-5246; fax: 562-627-5210; email: Joseph.Costa@faa.gov.